

Caring for Snakes

Several types of snakes are commonly kept as educational classroom animals, including garter snakes, rat and corn snakes, ball pythons, and king snakes. Because many of these species are native to North America, state permits may be required to possess them. Boas and pythons (other than ball pythons), while small when young, can grow to be quite large and may be difficult and dangerous to handle in the classroom.

Some snake species are venomous and should never be kept as pets or in the classroom. Always consult with state and federal wildlife agencies before acquiring any snake species. It is best to obtain snakes from captive-bred sources rather than deplete them from the wild by keeping wild-caught animals.

Housing Requirements

Snakes can be housed in glass or plexiglass aquaria, plastic sweater boxes, or specially constructed reptile cages. Cages must be impervious to water and cleaning agents so they can be effectively disinfected. For many species, cages should be cleaned every two weeks. Garter snake cages usually require weekly cleaning. A dilute bleach solution (1 part bleach to 30 parts water) is generally effective, but care must be taken to remove all disinfectant residues during rinsing. Do not use phenolic compounds like Lysol® anywhere around snakes—these chemicals are very toxic to them.

Cages must have a tight-fitting, secure lid with a soft screen or holes to allow adequate air exchange. Most snakes, including king, corn, and rat snakes, are escape artists and can push open loose-fitting lids and squeeze through very small openings.

The cage bottom can be lined with paper, indoor/outdoor carpet, or shredded hardwood bedding. Paper is inexpensive, but some inks may run when wet. Indoor/outdoor carpet provides traction for crawling, and can be disinfected and re-used. Shredded hardwood bedding is absorbent, attractive, and easy to clean and replace. Bedding permits the snake to burrow (a normal behavior). Aromatic shavings, such as pine and cedar, can be toxic to snakes and should not be used.

A water bowl large enough for the snake to crawl into should be provided. Bowls should be easy to disinfect and heavy enough to prevent tipping. Snakes may spend a significant amount of time soaking, particularly before shedding; therefore, it is important to change water bowls every one to two days to avoid fecal contamination and bacterial buildup.

Snakes are shy by nature and must be able to periodically hide from view. Pieces of terra cotta flower pots, sections of tree bark, “caves” made of flat rocks, and commercially produced “hide boxes” work well as retreats and also provide a raised surface to bask on.



BIOLOGICAL INFORMATION

- Snake skin is smooth, dry, and covered with scales. The skin is periodically shed in a single sheet, including the scales that cover and protect the eyes (spectacles). Several days before shedding, the skin and especially the eyes become cloudy and opaque. Snakes do not have eyelids or external ear openings.
- The snake tongue is forked and is part of an accessory olfactory system. As the snake flicks its tongue, it picks up scent molecules and transports them to a special organ in the roof of the mouth. A snake flicking its tongue is actually “tasting” its environment, which is a normal exploratory behavior.
- The glottis or respiratory tract opening is located on the floor of the mouth behind the sheath that holds the retractable tongue (see Resource 3). This configuration allows snakes to hold and swallow very large prey items without compromising or blocking respiration.
- Snakes are totally carnivorous, and they swallow their prey whole. Teeth are not used for chewing; rather, they are used to “walk” the food item down the esophagus. Snakes are also able to move each side of their lower jaw independently, thereby enabling them to swallow prey items larger than their own head. Some species, such as king snakes, will eat other snakes as part of their normal diet.
- Snakes are solitary by nature and do well when housed alone. However, some snakes can be pair- or group-housed, as long as they are the same size and not cannibalistic. Regardless of species, snakes must be separated during and immediately after feeding to prevent inadvertent ingestion of cage mates.
- Many snake species lay eggs; however, some species bear live young. Examples of live bearers include garter snakes, water snakes, and boa constrictors. If a snake lays eggs, they can be removed and incubated in warm, humid sphagnum moss. Unlike bird eggs, reptile eggs must not be rotated during incubation.

Snakes are ectotherms; they rely on the external environment to control their body temperature. Most snakes need warm ambient temperatures (approximately 75–85°F) and do best if provided a thermal gradient within the cage. A low-wattage light bulb placed outside the cage and focused on the basking surface will create a thermal gradient. Temperature should be monitored throughout the cage to ensure that the animal's environment does not become too hot or cold—either extreme can have fatal consequences. Snakes must also be prevented from coming into direct contact with any heat source, or thermal burns will result.

Food and Water

Many species of snakes, including king, rat, and corn snakes, will eat mice. Larger snakes may prefer rats. Most snakes will accept pre-killed prey; therefore, it is not necessary to feed live rodents. In fact, live rodents can gnaw on snakes and inflict severe wounds. Frozen prey must be thawed and warmed to room temperature or higher prior to feeding; cold food will putrefy rather than be digested in the snake's stomach.

Most adult king, rat, and corn snakes will eat once every 1–2 weeks, but may need feeding more often. The feeding schedule must be adjusted to the species, the age and size of the snake, and the type of food offered. Garter snakes eat fish, frogs, and earthworms, and are generally fed at least weekly. Young snakes may require more frequent feeding than adults, usually once or twice a week. Hungry snakes are normally more active than well-fed snakes.

Many reptile illnesses are caused by an improper diet. Please consult a veterinarian for advice. It is suggested that you contact your nearest zoo or a herpetology society to obtain the name of veterinarian knowledgeable about the care of reptiles. Not all veterinarians have experience in this area.

Handling

Snakes should always be approached and handled in a calm, deliberate, gentle manner. The snake's entire body must be supported during handling. If the body is not fully supported, the snake will probably experience minor to extreme discomfort and will become agitated. Snakes can usually be restrained by gripping them with moderate pressure while allowing them to crawl through a tube that works as a restraint device. Restraining snakes with a tight grip behind the head should be avoided unless absolutely necessary because such restraint can cause significant trauma to the snake and will certainly induce a flight-or-fight reaction. Any sort of handling will frighten most snakes and cause them to deliver defensive bites. Such snakes generally let go immediately, but may bite repeatedly. Hungry snakes often mistake a handler for food items. In this situation, bites are usually held much longer and may result in attempts at feeding.

Diseases

Animals caught from the wild can have viral, bacterial, and parasitic diseases. Improper feeding, sanitation, temperature, and other



stressors will predispose snakes to the development of disease. Signs of illness in snakes include mouth breathing, vomiting, diarrhea, not eating, and weight loss. If any of these signs are seen, a veterinarian should be contacted immediately. As mentioned above, a good place to go to identify a veterinarian who treats reptiles is to contact a zoo or the herpetology society in your area.

Human Health Concerns

Snakes and other reptiles can carry *Salmonella*, a bacterium which can cause significant gastrointestinal disease in humans. Good hygiene should be practiced whenever handling the animal. Wearing gloves while handling snakes and washing hands thoroughly after handling them will help protect you against this disease. Eating and drinking should also be avoided when anyone is around the animals. Proper hygiene during normal cage maintenance should also minimize potential exposure to *Salmonella*.

Nonpoisonous snakes can bite and cause an injury. Seek the advice of a physician in cases of a snake bite or if a human disease is suspected due to contact with snakes.

Resources

Contact your veterinarian or a local veterinary school or veterinary technology program to get more information about this animal species.

Some of this material has been adapted from the Assistant Laboratory Animal Technician Training Manual, American Association for Laboratory Animal Science, Memphis, TN.